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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,173

03/17/2005

Hiroynki Inokawa

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05/05/2009

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
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ALEXANDRIA, VA 22314

EXAMINER

CHOWDHURY, AFROZA Y

ART UNIT

PAPER NUMBER

2629

NOTIFICATION DATE

DELIVERY MODE

05/05/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/528,173	<b>Applicant(s)</b> INOKAWA ET AL.	
	<b>Examiner</b> AFROZA Y. CHOWDHURY	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 3,5-8,16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Pre-Appeal Brief*

1. Applicant's pre-appeal brief filed on **March 19, 2009** has been entered. The prosecution is re-opened. Claims 1-17 are currently pending. Claims 3, 6-8, 16, and 17 are nonelected. Claim 5 is withdrawn from further consideration since it belongs to other non-elected species.

2. This application contains claims 3, 5, 6-8, 16, and 17 drawn to an invention nonelected without traverse in the reply filed on **May 28, 2008**. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4, and 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Toda et al.** (US Pub. 2003/0146673) in view of **Shin'el** (US Patent 6,147,584)

As to claims 1, 14, and 15, Toda et al. discloses an input apparatus for detecting that the front surface of a panel is pressed or touched and inputting data corresponding to the detected result (abstract, [0012] – [0013]), comprising:

a flexible wiring board (fig 13) on which a pattern of predetermined electrodes is formed ([0018] – [0020]);

the piezoelectric actuator ((fig. 1(2)) on the flexible wiring board, wherein the piezoelectric actuator is configured to contact the panel (fig. 13, [0021]); and

electrically connecting wiring terminals formed at one end portion of the piezoelectric actuator and the predetermined electrodes formed on the flexible wiring board and positioned on the upper surface of the piezoelectric actuator (fig. 1,5, [0031], [0081]).

Toda et al. does not specifically teach a piezoelectric actuator, made of a piezoelectric bi-morph device.

However, it is obvious to one skill in the art to recognize the conventional way of making a piezoelectric actuator made of a piezoelectric bi-morph device.

Toda et al. does not explicitly teach a piezoelectric actuator being configured to bridge a pair of through-holes in a flexible wiring board and a part of the flexible wiring board being formed between the pair of the through-holes.

Shin'el teaches a printed circuit board being configured to bridge through-holes in a circuit board and a part of circuit board being formed between the pair of the through-holes (figs. 12, 13, col. 8, lines 19-33).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to incorporate Shin'el's idea of using through-holes in a circuit board to modify the flexible wiring board of the piezoelectric device of Toda et al. in order to make a piezoelectric actuator being configured to bridge a pair of through-holes in a flexible wiring board and a part of the flexible wiring board being formed between the pair of the through-holes so that the piezoelectric actuator does not easily peel off from the piezoelectric bodies.

As to claim 2, Toda et al. discloses an input apparatus for detecting that the front surface of a panel is pressed or touched and inputting data corresponding to the detected result (abstract, [0012] – [0013]).

Toda et al. does not teach input apparatus where the flexible wiring board is disposed so that the part formed between the pair of the through-holes contacts the panel.

However, it is an obvious choice of design to make an input apparatus wherein the flexible wiring board is disposed so that the part formed between the pair of the through-holes contacts the panel.

As to claim 4, Toda e. al. teaches an input apparatus wherein wiring terminals are disposed at the end portions of the piezoelectric actuator, the wiring terminals being electrically connected to predetermined electrodes formed on the flexible wiring board

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(fig. 1, [0018] – [0021]).

As to claim 9, it is an obvious design choice to make an input apparatus wherein the distance between both the end portions of the pair of the through-holes is smaller than the length of the longitudinal direction of the piezoelectric actuator, the width of the pair of the through-holes being larger than the width of the piezoelectric actuator.

As to claim 10, Toda et al. teaches an input apparatus comprising: a display portion for displaying a screen through the panel, wherein when the front surface of the panel is pressed or touched, an operation function item displayed on the display portion is selectively input corresponding to the position that is pressed or touched on the front surface of the panel, and wherein the piezoelectric actuator is disposed outside a display area of the display portion means (fig. 13, [0031]).

As to claim 11, Toda et al. teaches an input apparatus where a plurality of the piezoelectric actuators are disposed around the display area of the display portion (fig. 13, [0031]).

As to claim 12, Toda et al. teaches an input apparatus wherein the panel is a touch panel that is configured to selectively input an operation function item corresponding to the position that is touched, the panel having a display portion for displaying a screen through the touch panel and a holding portion being disposed

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outside the display area of the display portion and holding the display portion, wherein when an operation function item displayed on the display screen of the display portion is touched, the operation function item corresponding to the position that is touched is selectively input, and wherein the touch panel is moved in the vertical direction against the display surface of the display portion and the flexible wiring board is disposed between the touch panel and the holding portion (fig. 13, [0031], [0012] - [0013]).

Claim 13 rejected the same as claim 11, above.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 2, 4, and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AFROZA Y. CHOWDHURY whose telephone number is (571)270-1543. The examiner can normally be reached on 7:30-5:00 EST, 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC  
4/27/2009

/Bipin Shalwala/  
Supervisory Patent Examiner, Art  
Unit 2629